Debriefing

The C-130 instrument check-fit flight on July 11, 2016 was very successful. Initial results of the hygrometer and GPS system indicated that both systems were running normally. Radar altimeter was still not working. Dave and Sean will work on it. Other instruments performed very well.

The C-130 flight took about 5 hours with 12:11 pm takeoff and 4:56pm landing. It was about an hour longer than planned due mostly to the corridor flight and en route to clear sites over experimental area.

Immediate after the takeoff, the C-130 conducted cycling flights at 1kft, and then climbed to 17kft for in-situ winds. Some low clouds were found visually and by CPL when en route toward spiral site within the Cape May corridor. No other cases of clouds below C-130 were reported. It was very clear over spiral site. All short leveled legs at 10, 15, 20 and 28 kft for lidars were conducted normally. The cabin air pressure test was also conducted as planned. MFLL even successfully conducted a short-path calibration test during the flight. CPL performed all three power modes following all lidar safety roles. We should collect reasonable amounts of lidar data during both short leveled legs and other flight segments. Data evaluation is on the way.

Couple of points:

1) The designed L-shape flight for wind validation was not as close as the designed L-shape. Dave is checking other flight segments with perpendicular shapes, and generally wants to add an L-shape flight again in the future flights. For the 1kft cycling wind test, a few days are needed in order to compare aircraft and ground data. Potentially we may need flight those wind cal/val again.

2) There were considerable condensation, melting and leaking water within the cabin. Ground crew members will work on this issue today. Initial assessment showed that luckily there were no clear indication of water damage on the instrumentation.

3) The cabin air pressure control test was much more complicated than what we thought. Basically it needs a crew member manually controls cabin air pressure settings. The changes of the air pressure setting could affect people in the airplane. Most people in the flight felt the changes.

4) The control of time and position of those short leg segments were not easy. Limited latitudes were given to the pilots. Thus, the time for the actual flight on those segments was slightly longer than planned although it was generally within our considered range.